DATA SHEET

DXLink™ HDMI Receiver Module

AVB-RX-DXLINK-HDMI (FG1010-500)

Overview

The DXLink HDMI Receiver features built-in SmartScale® Technology to deliver HDMI with HDCP that is perfectly scaled for each connected display automatically, eliminating the integration challenges that can occur when sources and displays have different optimal resolutions. It accepts audio, video, control and Ethernet over one standard twisted pair cable up to 100 meters away from a compatible Enova DVX All-In-One Presentation Switcher, DXLink Transmitter Module or DXLink Wallplate; it accepts all this plus power over the same twisted pair cable when used in conjunction with the Enova DGX 8/16/32 Digital Media Switchers, Enova DVX-2150HD or DVX-2155HD. Mount the low-profile DXLink Receiver behind a display or above a ceiling mounted projector and control it using the built in RS-232 or IR ports. Plus monitor the connected display's settings, and send IR control signals back to the head end using the same twisted pair cable.

Common Applications

The DXLink HDMI Receiver Module receives HDMI and control signals from a remote DXLink Transmitter Module, DXLink Wallplate, Enova DGX or compatible Enova DVX. The receivers built-in control ports can be used to control a destination device and the ICS Lan port provides IP an access point with used in conjunction with the Enova DGX or compatible Enova DVX.

Features

- **Only One Cable** – Receive audio and video while passing control Ethernet and power over one twisted pair cable
- **SmartScale Technology** – Automatically responds to the display's declared EDID information and scales the video to the best resolution and video parameters for that display without manual setup; this prevents inferior video quality when sources are forced to lower resolutions to support the least capable display in the system
- **Native NetLinx® Control Everywhere** - Control connected destination devices using the built-in IR and RS-232 ports
- **Standard Twisted Pair Cable** – Save time and effort in installation by leveraging cost effective twisted pair cable, see the Cabling for Success with DXLink white paper for more details
- **HDCP Compliant**
- **DXLink Direct Connection with DXLink Wallplates** – When DXLink Wallplates are receiving Power over DXLink* from the PS-POE-AT-TC or PDXL-2, they can be connected directly to a DXLink Receiver for a point-to-point solution

  * AMX only supports the following DXLink Power sourcing devices: Enova DGX 8/16/32 Digital Media Switcher, Compatible Enova DVX All-In-One Presentation Switcher, PS-POE-AT-TC High Power PoE Injector or PDXL-2 Power over DXLink Controller. AMX only supports the use of these approved Power over DXLink solutions. Other third party power supplies or non-compatible standard PoE solutions may damage the

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DXLink equipment. The DXLink HDMI RX can also be powered via the included desktop power supply (ENERGY STAR® qualified) with power cord

Dealer Benefits

- **HDMI/HDCP with the Simplicity of Analog** - Hassle-free plug-and-play operation eliminates the need for time consuming, cumbersome work-around tools to deal with HDCP key constraints and resolution incompatibilities
- **Exceed Video Quality Expectations** - Integrated SmartScale Technology in the receiver automatically scales the video, ensuring the highest resolution possible to each display
- **Simplified Design and Installation** - Audio, video, control, Ethernet and power are distributed over one twisted pair cable speeding up installation at remote endpoints

Customer Benefits

- **Picture Perfect** - Prevents degraded video due to incompatibilities between different display resolutions by scaling the video to match each display's preferred resolution using innovative SmartScale Technology
- **Interruption Free Content** - Exclusive InstaGate Pro® Technology allows audio and video to be switched quickly and easily to every connected display without the difficulties typically associated with HDCP
- **Audio, Video and Control Everywhere** - Compact low profile design and remote powering capabilities allows the receiver to be installed in discreet locations out of sight without additional wiring

Additional Features

- **Built-in Control Ports** - Control the display using the built-in IR or RS-232 control ports
- **Low Profile Design** - Easily mount behind a display or above a ceiling mounted projector
- **IR Receiver** - Send IR commands back to the Enova DGX or compatible Enova DVX to control source equipment using an IR remote
- **Power Remotely –** Power over DXLink* is carried over one twisted pair to simplify installation when used with the Enova DGX, Enova DVX, PS-POE-AT-TC or PDXL-2
- **3D Support**** - Pass through latest video formats including 3D and Deep Color
- **Ethernet Connectivity** - Provides ICSLan Ethernet support at the Receiver - add Ethernet connectivity to a Touch Panel, plug in a WAP or stream IP audio/video to a Ethernet enabled display

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**This feature will be available upon release of a future firmware update

Specifications

GENERAL	
Dimensions (HWD)	1” x 8 3/4” x 5 1/5” (2.54 x 22.12 cm x 13.08 cm)
Weight	Approx. 1.1 lb (0.50 kg) Shipping Weight: Approx. 2.20 lb (1.00 kg)
Mounting Options	Compatible with all V Style versatile mounting options including rack, surface or pole
Compatible AMX Products	•Enova DGX 8/16/32 Digital Media Switchers • Enova DVX-3155HD, DVX-2155HD, DVX-3150HD and DVX-2150HD All-In-One Presentation Switchers •DXLink Multi-Format Wallplate Transmitters as a point-to-point solution (when Wallplates are powered by PS-POE-AT-TC or PDXL-2) •DXLink Multi-Format TX Module •PS-POE-AT-TC High Power PoE Injector •PDXL-2 Power over DXLink Controller
MTBF	381,000 hours
Approvals	CE, FCC, UL, cUL, RoHS / WEEE Compliant
Included Accessories	Each HDMI RX ships with a desktop power supply (ENERGY STAR® qualified) with power cord
Optional Accessories	AVB-VSTYLE-SURFACE-MNT, V Style Module Surface

	Mount (FG1010-722) AVB-VSTYLE-RMK-1U, V Style Module Tray (FG1010-720) AVB-VSTYLE-RMK-FILL-1U, V Style Module Tray w/fill Plates (FG1010-721) AVB-VSTYLE-POLE-MNT, V Style Module Pole Mount (FG1010-723) CC-NIRC, NetLinx IR Emitter Cable (FG10-000-11) IR03, External IR Receiver Module (FG-IR03) •PS-POE-AT-TC High Power PoE Injector (FG423-84) •PDXL-2 Power over DXLink Controller (FG1090-170)

ACTIVE POWER REQUIREMENTS	
AC Power	100-240 VAC single phase, 50-60 Hz 0.6 A @ 115 VAC max
DXLink Power	Power can also be supplied by a DXLink Power sourcing device such as: •Enova DGX 8/16/32 Digital Media Switcher (with a DXLink Twisted Pair Output Board installed) •Compatible Enova DVX All-In-One Presentation Switcher (3150HD, 3155HD, 2150HD, 2155HD) •PS-POE-AT-TC High Power PoE Injector •PDXL-2 Power over DXLink Controller When installed in conjunction with an Enova DGX use the Enova DGX Configuration Tool located at AMX.com/enova to determine the power requirements of the configuration **AMX only supports the use of these approved Power over DXLink solutions. Other third party power supplies or non-compatible standard PoE solutions may damage the DXLink equipment.**
Power Consumption (Max)	Local 12V supplied: 18 W Power over DXLink supplied: 15 W
Power Connector	2.1 mm DC Power Jack (local power) Included on DXLink Connection (Power over DXLink)

POWER SUPPLY	
External, Included	Each HDMI RX ships with a desktop power supply (ENERGY STAR® qualified) with power cord
External, Optional	Power can also be supplied by a DXLink Power sourcing device such as: •Enova DGX 8/16/32 Digital Media Switcher (with a DXLink Twisted Pair Output Board installed) •Compatible Enova DVX All-In-One Presentation Switcher (3150HD, 3155HD, 2150HD, 2155HD) •PS-POE-AT-TC High Power PoE Injector •PDXL-2 Power over DXLink Controller When installed in conjunction with an Enova DGX use the Enova DGX Configuration Tool located at AMX.com/enova to determine the power requirements of the configuration **AMX only supports the use of these approved Power over DXLink solutions. Other third party power supplies or non-compatible standard PoE**

	solutions may damage the DXLink equipment.

ENVIRONMENTAL	
Temperature (Operating)	32° to 104° F (0° to 40° C)
Temperature (Storage)	-22° to 158° F (-30° to 70° C)
Humidity (Operating)	5% to 85% RH (non-condensing)
Humidity (Storage)	0% to 90% RH (non-condensing)
Heat Dissipation (Max)	Local 12V supplied: 61 BTU/hr Power over DXLink supplied: 51 BTU/hr

FRONT CONNECTORS	
Advanced Configuration Interface**	USB Mini-B Connector

BACK CONNECTORS	
Local Power	2.1 mm DC Power Jack
DXLink Input	RJ-45
ICS LAN/Ethernet Port	RJ-45 Connector, TCP/IP Port (ICS LAN 10/100)
Serial	3.5mm Pluggable Phoenix Terminal Block Bidirectional RS-232 Standard NetLinx Baudrate 1200-115k Parity support Odd/Even/None
IR Control	Port for use with IR03 Receiver (Optional Accessory FG-IR03) Port for use with CC-NIRC Emitter (Optional Accessory FG10-000-11)
USB (HID) Keyboard & Mouse**	USB Type B Connector
HDMI Output	HDMI Type A Female
Analog Stereo Output	3.5mm Mini-Stereo Jack

CONTROL	
Advanced Configuration Interface**	USB Mini-B Connector

INDICATORS	
Power Indicator	Green indicates whether or not the module is powered on
Video Indicator	Green LED indicates the presence of video and audio signals through the module
Audio Indicator	Green LED indicates the presence of audio signals through the module
Scaling Button and LEDs	1 push button and 3 green LEDs; use Scaling button to select one of the 3 Scaling options: Bypass, Auto (SmartScale), or Manual. The factory default is Auto (SmartScale). If the RX power cycles, it defaults to the last persisted mode (achieved by pressing scaling button and holding it until the desired scaling mode LED flashes)
IR TX Indicator	Red LED lights during the transmission of IR data via the rear IR port
IR RX Indicator	Yellow LED lights during the receipt of IR data via the rear IR port
RS-232 TX Indicator	Red LED shows serial transmit (TX) data activity
RS-232 RX Indicator	Yellow LED shows serial receive (RX) data activity
LINK/ACT	Green LED lights when the Ethernet cable is connected and an active link is established. This LED also blinks

	when receiving Ethernet data packets
Status	Green LED lights when the Controller is programmed and communicating properly
CEC Indicator	Not currently supported
USB Indicator	Not currently supported
ID Pushbutton	Places system in NetLinx Device ID assignment mode

DXLink	
Transport Layer Throughput (Max)	10.2 Gbps
Twisted Pair Cable Type	Cat5e, Cat6/6e, Cat6A, Cat7 of UTP, SF/UTP, S/FTP, and F/UTP varieties ***
Twisted Pair Cable Length	Up to 328 ft (100 m)***

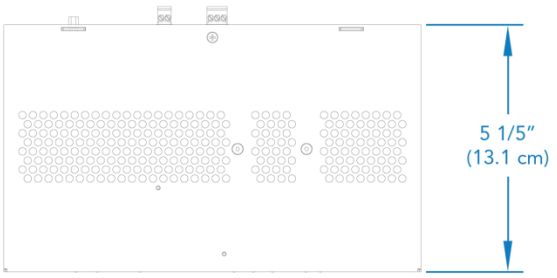
*** Cable runs with a minimum specification of ANSI/TIE/EIA 568A-5 and ratings of 250MHz or better may be used with DXLink equipment. However, cable run topology and environmental influences can affect the overall successful distance capabilities of these runs. For successful deployments up to 100 meters without consideration to outside variables, AMX recommends the use of shielded category cable (STP) or Cat6A (or better) versions of unshielded or shielded twisted pair (UTP/STP) for DXLink runs. For more details and helpful cabling information, please contact your AMX representative for a copy of the white paper titled “Cabling for Success with DXLink”. IMPORTANT NOTICE: DXLink twisted pair cable runs for DXLink equipment should only be run within a common building.

HDMI	
Compatible Formats	HDMI , HDCP, DVI
Signal Type Support	HDMI DVI-D (Single Link with HDMI Cable Adapter)
Input Signal Type	DXLink from any of the following: DXLink HDMI Transmitter Module, DXLink Multi-Format Transmitter Module, DXLink Multi-Format Transmitter Wallplate, DXLink Enova DGX DXLink Twisted Pair Output Board, Enova DVX-3155HD, DVX-2155HD, DVX-3150HD and DVX-2150HD All-In-One Presentation Switchers
Output Signal Type	HDMI DVI-D (Single Link with Cable Adapter)
Output Connector	HDMI Type A Female
Output Scaling	SmartScale or Manual Configuration or Bypass
SmartScale Output Resolution Support	All resolutions between 480p and 1920 x 1200 @ 60 Hz via automatic SmartScale query of the display's declared EDID Detailed Timing Definition
Output Nominal Voltage	1.0 Vpp Differential
Output Re-clocking	Yes
+5V DDC Pin Output	50 mA when using Enova DXLink Power, 500 mA when using local 12V supply
+5V USB Output	150 mA when using Enova DXLink Power, 500 mA when using local 12V supply
Output Rise Time / Fall Time	425 ps typ (20% - 80%)
Propagation Delay (Typ)	25 ms when scaling, 5 us when in Bypass mode
HDMI Audio Synchronization	Video Formats @ 60Hz frame rate: Audio is actively delayed to match video within 9 ms leading to 10 ms lagging when scaling. When in Bypass mode the audio is matched to video within 1 ms.
Data Rate (Max)	4.95 Gbps / 6.75 Gbps 6.75 Gbps supported when the DXLink HDMI RX Scaler is in Bypass mode and format is 1080p60 or less
Pixel Clock (Max)	165 MHz / 225 MHz 255 MHz supported when the DXLink HDMI RX Scaler is in Bypass mode and format is 1080p60 or less
Progressive Resolution Support	480p up to 1920x1200 @ 60 Hz including but not

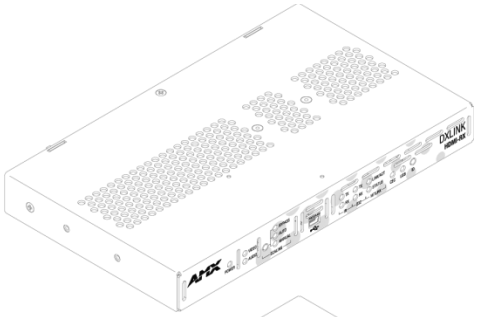
	limited to those resolutions show in the DXLink Twisted Pair Transmitters/Receiver Instruction Manual If input is interlaced, the scaled output will deinterlace video to a progressive resolution format. If in scaler Bypass mode interlaced input will pass through unaltered
Deep Color Support**	24-bit, 30-bit^, 36-bit^ 30-bit and 36-bit supported when the DXLink HDMI RX Scaler is in Bypass mode and format is 1080p60 or less
Color Space Support	RGB: 4:4:4 YCbCr 4:4:4: and 4:2:2 Input signal support for YCbCr 4:4:4 and 4:2:2, output color-space is converted to RGB 4:4:4
3D Format Support**	Yes (HDMI Primary Formats) Frame Packing 1080p up to 24Hz Frame Packing 720p up to 50/60Hz Frame Packing 1080i up to 50/60Hz Top-Bottom 1080p up to 24Hz Top-Bottom 720p up to 50/60Hz Side-by-Side Half 1080p up to 50/60Hz Side-by-Side Half 720p up to 50/60Hz 3D supported when the DXLink HDMI RX Scaler is in Bypass mode and format is 1080p60 or less
Audio Format Support	Dolby TrueHD**, Dolby Digital, DTS-HD Master Audio**, DTS, 2 CH through 8 CH L-PCM Dolby Digital and DTS support up to 48kHz, 5.1 channels
Audio Resolution	16 bit to 24 bit
Audio Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 96 kHz, 192kHz
Local Audio Support	Yes for audio extraction
HDCP Support	Yes
CEC Support	None

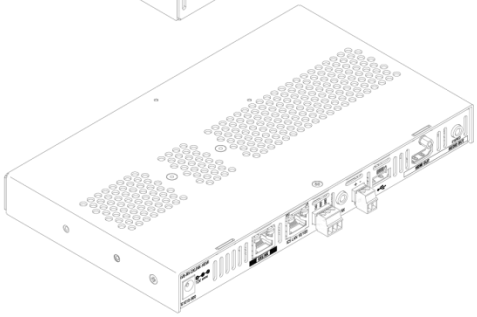
STEREO AUDIO	
Output Signal Types	Stereo Analog
Analog Output Level (Max)	+2 dBu, unbalanced
Analog Output Frequency Response	< +0 dB to -0.5 dB, 20 Hz to 20 kHz
Analog Audio Output THD+N	<0.03 %, 1 kHz, -10dBu to +2 dBu
Analog Audio Out SNR	>85 dB, 20 Hz to 20 kHz Vin=+2dBu
Digital to Analog Reference Level	0 dBfs = +0 dBu
Audio Synchronization	Video Formats @ 60Hz frame rate: Audio is actively delayed to match video within 9 ms leading to 10 ms lagging when scaling. When in Bypass mode the audio is matched to video within 1 ms
Output Connectors	3.5mm Mini-Stereo Jack (Analog Stereo)

**This feature will be available upon release of a future firmware update

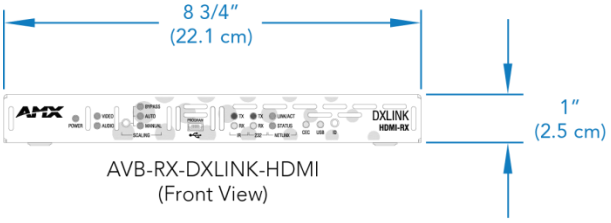


AVB-RX-DXLINK-HDMI
(Top View)



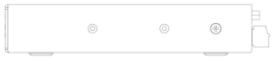


AVB-RX-DXLINK-HDMI
(Isometric Views)



AVB-RX-DXLINK-HDMI
(Front View)

AVB-RX-DXLINK-HDMI
(Back View)



AVB-RX-DXLINK-HDMI
(Right View)

About AMX
AMX hardware and software solutions simplify the implementation, maintenance, and use of technology to create effective environments. With the increasing number of technologies and operating platforms at work and home, AMX solves the complexity of managing this technology with reliable, consistent and scalable systems. Our award-winning products span control and automation, system-wide switching and audio/video signal distribution, digital signage and technology management. They are implemented worldwide in conference rooms, homes, classrooms, network operation / command centers, hotels, entertainment venues, broadcast facilities, and more. ©2013 AMX. All rights reserved.
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